# DLD Assignment #1

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Submitted to Sir Rafay Shaikh

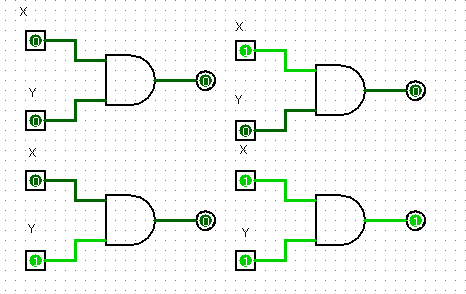
Q:1 which gates are categorized as universal gates and how are they used?

Ans: There are 2 universal type of gates

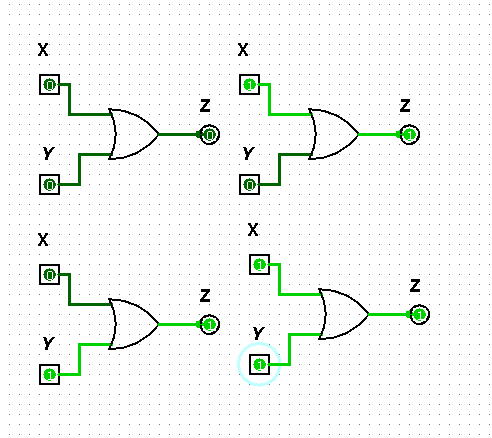
* Nand Gate
* Nor Gate
* From there universal gate we can make other login gates for example or, and, not, Xnor gates by using the combination of Nand or Nor gates.

Q:1 Verify the Truth Table for AND Gate and OR Gate.

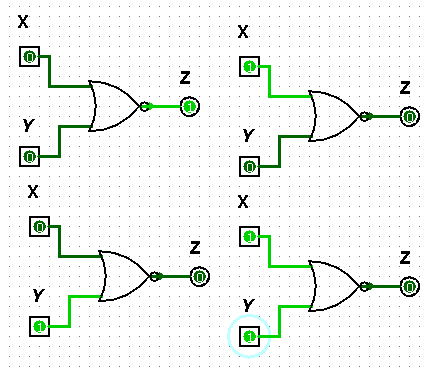
And Gate:



|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

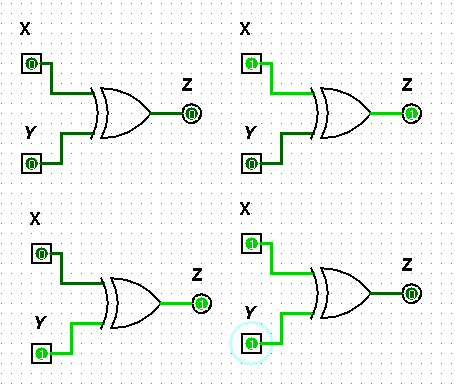
OR Gate:

|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |



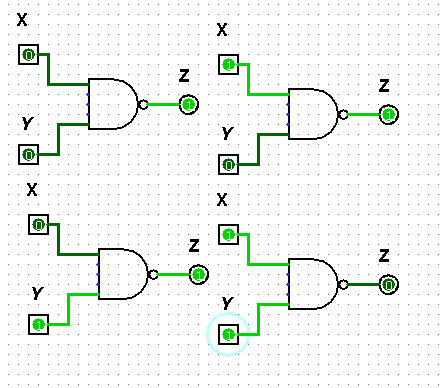
NOR Gate:

|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

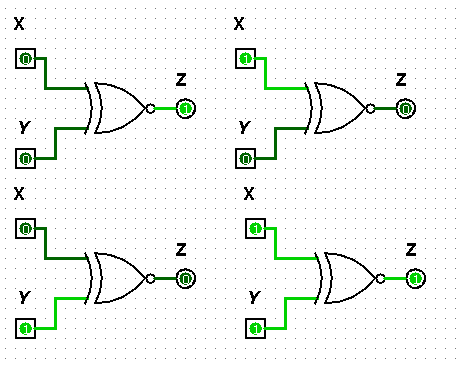


XOR Gate:

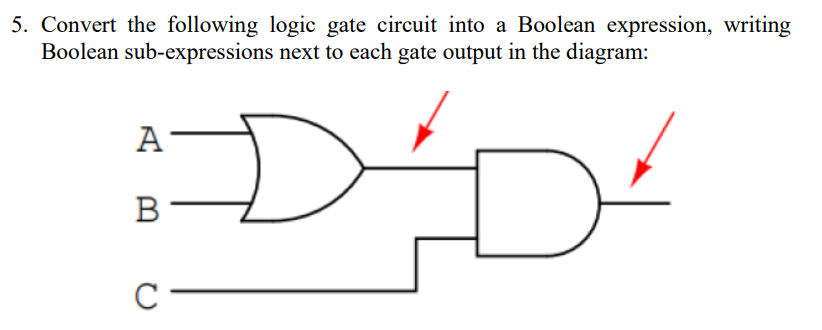
|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

NAND Gate:

|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

XNOR Gate:

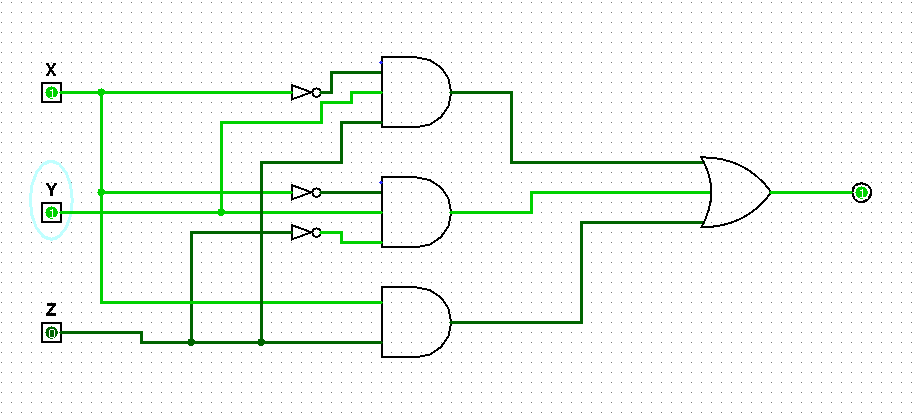
|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |



Ans: (A+B)\*C

6. Draw the following function in Circuit maker.

1. F = 𝑿’YZ + 𝑿’Y𝒁’ + XZ
2. F=𝑿’Z + X𝒀’Z +Y **Z’**

**1:**

2: 